

## PROJECT DESCRIPTION

## GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 144 (E. PATRICK STREET) AND MONROE AVENUE IN THE CITY OF FREDERICK, MARYLAND. MD 144 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

## INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA THREE-PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MD 144 APPROACHES OPERATING CONCURRENTLY AND THE MONROE AVENUE APPROACH OPERATING ALONE.

AN ALTERNATE PEDESTRIAN PHASE IS PROVIDED ACROSS THE EAST LEG OF MD 144 AND PEDESTRIAN INDICATIONS ARE PROVIDED ACROSS MONROE AVENUE.

INTERCONNECT TO FRANKLIN STREET WILL BE PROVIDED.

## TYPICAL MESSAGES FOR ACCESSIBLE PED SIGNALS

## EAST LEG - MD 144 (E. PATRICK ST.) AND MONROE AVENUE

WAIT: "WAIT TO CROSS EAST PATRICK AT MONROE, WAIT."\*

WALK: RAPID TICK

## NORTH LEG - MONROE AVENUE AND MD 144 (E. PATRICK ST.)

WAIT: "WAIT TO CROSS MONROE AT EAST PATRICK, WAIT."\*

WALK: RAPID TICK

\* MESSAGE USED IF DISTANCE FROM NEAREST PUSHBUTTON FOR PERPENDICULAR CROSSING IS < 10'  
\*\* MESSAGE USED IF CROSSWALK DIVERGES FROM OR CONVERGES WITH PARALLEL TRAFFIC

NOTE: MESSAGES FOR INTERSECTION CONFIGURATIONS, VARYING FROM THE ABOVE ARE TO BE APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

## CONTROLLER REQUIREMENTS

INSTALL A CABINET BASE MOUNT P-44 TS-2 PER CITY OF FREDERICK SPECIFICATION AND DESIGN IN NATURAL FINISH WITH EPAC3608M52 AND PLUGS AND ONE (1) ITERIS VIDEO PROCESSOR WITH (1) CAMERA AND BRACKET, ONE (1) COMMUNICATIONS INTERFACE, EPAC31008 'D' PANEL AND INTERSECTION CONTROLLER WITH CONCURRENT ON-STREET MASTER PROCESSOR CAPABILITY AND CONFIGURATION SUPPORT.

## MAINTENANCE OF TRAFFIC

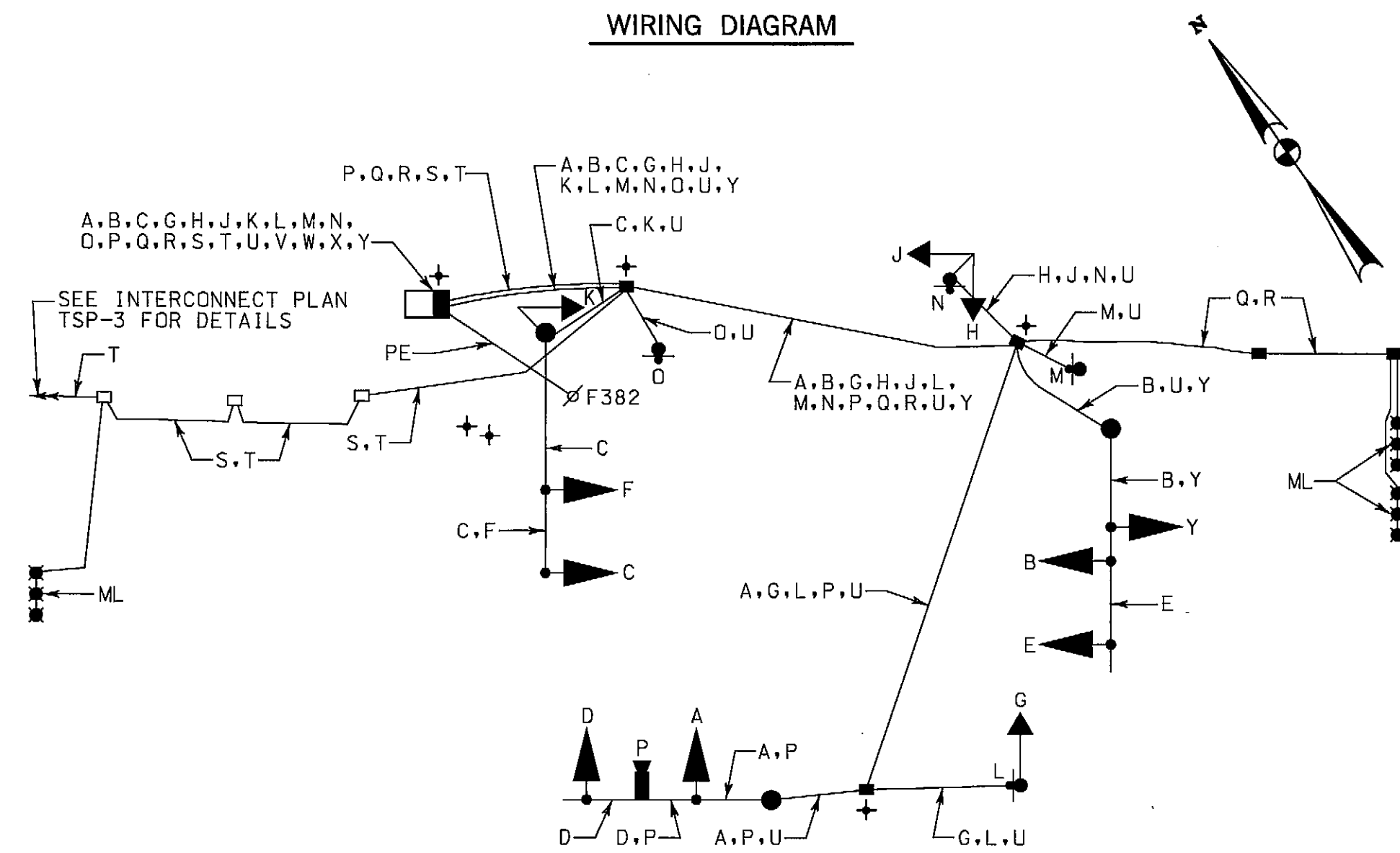
THE FOLLOWING TRAFFIC CONTROL STANDARDS SHALL BE REFERENCED FOR THE PROJECT. ADDITIONAL TRAFFIC CONTROL STANDARDS MAY BE USED AS DIRECTED BY THE ENGINEER.

STANDARD NO. MD-104.03-01 (SHOULDER CLOSURE)

STANDARD NO. MD-104.02-09 (FLAGGING OPERATION)

STANDARD NO. MD-104.02-13 (INTERSECTION FLAGGING OPERATION)

## WIRING DIAGRAM



## WIRING KEY

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

P VIDEO CAMERA DETECTION LEAD-IN CABLE

Q R S MICROLOOP PROBE LEAD-IN

T 12-PAIR COMMUNICATION CABLE (JELLY-FILLED)

U STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)

V W X 1-CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)

ML - MICROLOOP PROBE SET

PE - PROPOSED UNDERGROUND ELECTRICAL SERVICE

+ - 3/4 IN. X 10 FT. GROUND ROD

## EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA

ITEM NO.	QUANTITY	DESCRIPTION
9570	13 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF (GROUND MOUNT) : - 1 EACH W3-3 SIGN (36 IN. x 36 IN.) WITH "NEW" PANEL W16-14(1) (24 IN. x 24 IN.) AND FLAG - GROUND MOUNT
9571	46 S.F.	SHEET ALUMINUM SIGNS TO CONSIST OF (POLE MOUNT) : - 2 EACH D-3(1) SIGN (VARIABLE x 16 IN.) DUAL FACED - MAST ARM MOUNT - 1 EACH M1-5(4) (78 IN. x 36 IN.) - MAST ARM MOUNT - 2 EACH R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS MONROE AVENUE" - 2 EACH R10-3(1) SIGN (9 IN. x 15 IN.) TO READ "PUSHBUTTON TO CROSS EAST PATRICK STREET"

## EQUIPMENT LIST "C"

NO EQUIPMENT TO BE REMOVED AND RETURNED TO SHA

## PROJECT CONTACTS

THE CONTACT PERSONS FOR SHA ARE AS FOLLOWS:

MR. JOHN CONCANNON  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: (301) 624-8140/8141

MS. ANDREA ABEND  
DISTRICT UTILITY ENGINEER  
PHONE: (301) 624-8115/8116

MR. RAY JOHNSON  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
PHONE: (301) 624-8105

MR. RICHARD L. DAFF, SR.  
CHIEF, TRAFFIC OPERATIONS DIVISION  
PHONE: (410) 787-7630

THE CONTACT PERSON FOR THE CITY OF FREDERICK ARE AS FOLLOWS:

MS. DEVON C. HAHN, P.E.  
CITY TRAFFIC ENGINEER  
PHONE: (301) 600-1443

## PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11
	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	R Y G	W 20	W 20	W 20	W 20
PHASE 2 + 6	G	G	G	G	G	R	R	WK	WK	DW	DW
PED CLEARANCE	G	G	G	G	G	R	R	FLOW	FLOW	DW	DW
2 + 6 CHANGE	Y	Y	Y	Y	Y	R	R	DW	DW	DW	DW
PHASE 4	R	R	R	R	R	G	G	DW	DW	DW	DW
4 CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW
PHASE 4 ALT.	R	R	R	R	R	G	G	DW	DW	WK	WK
PED CLEARANCE	R	R	R	R	R	G	G	DW	DW	FLOW	FLOW
4 ALT. CHANGE	R	R	R	R	R	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLY	FLR	FLR	DARK	DARK	DARK	DARK

TOD NO: XX424-15M  
SHA NO: BW620M83  
MD 144 @ Monroe Street

## EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
1003	3 EACH	MAINTENANCE OF TRAFFIC
2001	5 C.Y.	CLASS 2 EXCAVATION
2002	9 C.Y.	TEST PIT EXCAVATION
5005	130 L.F.	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5006	230 L.F.	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5007	75 L.F.	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
6001	90 L.F.	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
6002	775 S.F.	5 INCH CONCRETE SIDEWALK
6003	70 S.F.	DETECTABLE WARNING SURFACES
8001	1 EACH	2 WIRE CENTRAL CONTROL UNIT
8007	4 EACH	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS
8008	4 EACH	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8013	4 EACH	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEADS
8015	2 EACH	MAST ARM POLE & 38 FT MAST ARM ANY 'T' DIMENSION
8018	1 EACH	MAST ARM POLE & 50 FT MAST ARM ANY 'T' DIMENSION
8019	3 EACH	MICROLOOP PROBE (ANY LENGTH) LEAD IN CABLE UP TO 1000 FT
8021	1 EACH	REM & DISPOSE MAT & EQUIP PER ASSIGN
8026	25 L.F.	1 INCH DETECTOR SLEEVE GALVANIZED OR FLEXIBLE LIQUID TIGHT
8027	600 L.F.	12 - PAIR COMMUNICATION CABLE, SELF-SUPPORTING OR JELLYFILLED
8033	120 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - SLOTTED
8034	500 L.F.	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8035	19 L.F.	WOOD SIGN SUPPORTS UP TO 4 X 6
8036	59 S.F.	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8038	315 L.F.	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8043	45 L.F.	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG - THHN/THWN
8045	5 EACH	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8050	21 EACH	12 INCH LED SIGNAL HEAD SECTION
8052	2 EACH	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8054	565 L.F.	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8056	630 L.F.	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8057	730 L.F.	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8060	60 L.F.	SAW CUT FOR SIGNAL (LOOP DETECTOR)
8069	1 EACH	FURNISH AND INSTALL BASE MOUNTED CABINET TO CITY OF FREDERICK SPECIFICATIONS WITH ASSOCIATED EQUIPMENT
8070	1 EACH	FURNISH AND INSTALL EPA C3608M52 W/EPA C31008 "D" PANEL
8071	1 EACH	UPGRADE INTERSECTION W/CONCURRENT ON-STREET MASTER PROCESSOR CAPABILITY AND CONFIGURATION SUPPORT

SHA

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 144 (E. Patrick Street) and Monroe Avenue  
Frederick, MD

## GENERAL INFORMATION SHEET

SCALE NONE ADVERTISED DATE 5/6/2011 CONTRACT NO. XX4245185

DESIGNED BY S. Bloss COUNTY Frederick  
DRAWN BY S. Bloss LOGMILE 10A14403.98  
CHECKED BY N. Leary TMS NO. 1797  
F.A.P. NO. TOD NO.

TS NO. 4761 DRAWING TSP-4 OF 4 SHEET NO. 4 OF 4

WR&A  
WHITMAN, REQUARDT  
& ASSOCIATES, LLP  
801 South Caroline Street, Baltimore, Maryland 21231

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FILE: N:\91555-154\CADD\pSG-N004\_1797.dgn